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|---|--|---|--|------------------------------------|
| FORM PCT-1190 (REV 10-96) | | U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE | | ATTORNEY'S DOCKET NUMBER |
| TRANSMITTAL LETTER TO THE UNITED STATES DESIGNATED/ELECTED OFFICE (DO/EO/US) CONCERNING A FILING UNDER 35 U.S.C. 371 | | | | GSQ 2 017 |
| INTERNATIONAL APPLICATION NO. 09/101601 | | INTERNATIONAL FILING DATE 09.04.98 | | PRIORITY DATE CLAIMED 09/101601 |
| TITLE OF INVENTION IMPROVEMENT TO AN ELECTROACOUSTIC COMMUNICATION DEVICE FOR USE ON PROTECTIVE HEADGEAR | | | | |
| APPLICANT(S) FOR DO/EO/US Adrien (NMI) GALET and Bernard (NMI) MADEN | | | | |
| Applicant herewith submits to the United States Designated/Elected Office (DO/EO/US) the following items and other information: | | | | |
| <p>1. <input checked="" type="checkbox"/> This is a FIRST submission of items concerning a filing under 35 U.S.C. 371.</p> <p>2. <input type="checkbox"/> This is a SECOND or SUBSEQUENT submission of items concerning a filing under 35 U.S.C. 371.</p> <p>3. <input checked="" type="checkbox"/> This express request to begin national examination procedures (35 U.S.C. 371(f)) at any time rather than delay examination until the expiration of the applicable time limit set in 35 U.S.C. 371(b) and PCT Articles 22 and 39(1).</p> <p>4. <input checked="" type="checkbox"/> A proper Demand for International Preliminary Examination was made by the 19th month from the earliest claimed priority date.</p> <p>5. <input checked="" type="checkbox"/> A copy of the International Application as filed (35 U.S.C. 371(c)(2))</p> <p>a. <input type="checkbox"/> is transmitted herewith (required only if not transmitted by the International Bureau).</p> <p>b. <input checked="" type="checkbox"/> has been transmitted by the International Bureau.</p> <p>c. <input type="checkbox"/> is not required, as the application was filed in the United States Receiving Office (RO/US)</p> <p>6. <input type="checkbox"/> A translation of the International Application into English (35 U.S.C. 371(c)(2)).</p> <p>7. <input checked="" type="checkbox"/> Amendments to the claims of the International Application under PCT Article 19 (35 U.S.C. 371(c)(3))</p> <p>a. <input type="checkbox"/> are transmitted herewith (required only if not transmitted by the International Bureau).</p> <p>b. <input checked="" type="checkbox"/> have been transmitted by the International Bureau.</p> <p>c. <input type="checkbox"/> have not been made; however, the time limit for making such amendments has NOT expired.</p> <p>d. <input type="checkbox"/> have not been made and will not be made.</p> <p>8. <input type="checkbox"/> A translation of the amendments to the claims under PCT Article 19 (35 U.S.C. 371(c)(3)).</p> <p>9. <input type="checkbox"/> An oath or declaration of the inventor(s) (35 U.S.C. 371(c)(4)).</p> <p>10. <input type="checkbox"/> A translation of the annexes to the International Preliminary Examination Report under PCT Article 36 (35 U.S.C. 371(c)(5)).</p> | | | | |
| Items 11. to 16. below concern document(s) or information included: | | | | |
| 11. <input type="checkbox"/> An Information Disclosure Statement under 37 CFR 1.97 and 1.98. | | | | |
| 12. <input type="checkbox"/> An assignment document for recording. A separate cover sheet in compliance with 37 CFR 3.28 and 3.31 is included. | | | | |
| 13. <input checked="" type="checkbox"/> A FIRST preliminary amendment | | | | |
| <input type="checkbox"/> A SECOND or SUBSEQUENT preliminary amendment | | | | |
| 14. <input type="checkbox"/> A substitute specification. | | | | |
| 15. <input type="checkbox"/> A change of power of attorney and/or address letter. | | | | |
| 16. <input checked="" type="checkbox"/> Other items or information: | | | | |
| (a) a copy of International Publication No. WO 97/25832 | | | | |
| (b) a copy of International Search Report of 28.04.97 | | | | |

17. ☒ The following fees are submitted:**BASIC NATIONAL FEE (37 CFR 1.492(a)(1)-(5)):**

Search Report has been prepared by the EPO or JPO..... \$930.00

International preliminary examination fee paid to USPTO (37 CFR 1.482)
..... \$720.00No international preliminary examination fee paid to USPTO (37 CFR 1.482)
but international search fee paid to USPTO (37 CFR 1.445(a)(2)).. \$790.00Neither international preliminary examination fee (37 CFR 1.482) nor
international search fee (37 CFR 1.445(a)(2)) paid to USPTO..... \$1070.00International preliminary examination fee paid to USPTO (37 CFR 1.482)
and all claims satisfied provisions of PCT Article 33(2)(4)..... \$98.00**ENTER APPROPRIATE BASIC FEE AMOUNT =**Surcharge of \$130.00 for furnishing the oath or declaration later than ☐ 20 ☐ 30
months from the earliest claimed priority date (37 CFR 1.492(e)).

| CLAIMS | NUMBER FILED | NUMBER EXTRA | RATE |
|---|--------------|--------------|------------|
| Total claims | -20 = | | X \$22.00 |
| Independent claims | -3 = | | X \$82.00 |
| MULTIPLE DEPENDENT CLAIM(S) (if applicable) | | | + \$270.00 |

TOTAL OF ABOVE CALCULATIONS = \$ 930.00Reduction by 1/2 for filing by small entity, if applicable. Verified Small Entity Statement
must also be filed (Note 37 CFR 1.9, 1.27, 1.28).**SUBTOTAL =**Processing fee of \$130.00 for furnishing the English translation later than ☐ 20 ☐ 30
months from the earliest claimed priority date (37 CFR 1.492(f)).**TOTAL NATIONAL FEE =** \$ 930.00Fee for recording the enclosed assignment (37 CFR 1.21(h)). The assignment must be
accompanied by an appropriate cover sheet (37 CFR 3.28, 3.31). \$40.00 per property +**TOTAL FEES ENCLOSED =** \$ 930.00Amount to be:
refunded \$
charged \$a. ☒ A check in the amount of \$ 930.00 to cover the above fees is enclosed.b. ☐ Please charge my Deposit Account No. _____ in the amount of \$ _____ to cover the above fees.
A duplicate copy of this sheet is enclosed.c. ☒ The Commissioner is hereby authorized to charge any additional fees which may be required, or credit any
overpayment to Deposit Account No. 06-0308. A duplicate copy of this sheet is enclosed.**NOTE:** Where an appropriate time limit under 37 CFR 1.494 or 1.495 has not been met, a petition to revive (37 CFR 1.137(a) or (b)) must be filed and granted to restore the application to pending status.

SEND ALL CORRESPONDENCE TO:

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FAY, SHARPE, BEALL, FAGAN,
MINNICH & MCKEE
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(216) 861-5582

SIGNATURE

Thomas E. Kocovsky, Jr.

NAME

28, 383

REGISTRATION NUMBER

RECEIVED PCT/PTO 14 SEP 1998

#

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

| | | |
|-------------------------------|---|---------------------|
| In re application of: |) | Examiner: |
| A. GALET, et al. |) | |
| |) | Art Unit: |
| Serial No.: <u>09/101,601</u> |) | |
| |) | |
| Filed: January 9, 1997 |) | |
| |) | |
| For: IMPROVEMENT TO AN |) | |
| ELECTROACOUSTIC |) | |
| COMMUNICATION DEVICE |) | |
| FOR USE ON PROTECTIVE |) | |
| HEADGEAR |) | |
| |) | |
| Attorney Docket No.: |) | Cleveland, OH 44114 |
| GSQ 2 017 |) | September 10, 1998 |

PRELIMINARY AMENDMENT

Assistant Commissioner For Patents
Washington, D.C. 20231

Dear Sir:

In the Abstract:

Please insert the following abstract:

-- Abstract of the Disclosure

A protective headgear (30) equipped with an electroacoustic communication device (1) includes a sensor (2), such as a microphone, and a receiver (3), such as an earphone, which are arranged in a housing (4). The housing (4) which houses the sensor (2) and the receiver (3) also has a connection tab (5) which attaches to a connecting guide (53) on the protective headgear to allow attachment of the housing (4) to the headgear (30). The headgear (30) includes a deformable lining (41) with a headband (46) with a deformable partition (47). The headband (46) is fixed to the headgear (30) by at least one lateral guide (53) holding the communication device in the housing (4). This arrangement allows for a simple communication device to be attached to a very sturdy headgear for use in hazardous environments. --

09/101,601

Please amend the English-language specification as follows:

In the Title:

On page 1, line 1, please amend the title to read:

-- IMPROVEMENT TO AN ELECTROACOUSTIC COMMUNICATION DEVICE
FOR USE ON PROTECTIVE HEADGEAR --.

In the Specification:

On page 1, line 3, please insert the subheading:

-- Background of the Invention -- .

On page 1, line 5, please delete "a device for".

On page 1, line 16, please delete "delicate" and
insert therefor -- precarious --.

On page 2, before line 1, please insert the
subheading:

-- Summary of the Invention -- .

On page 2, before line 1, please delete
"Accordingly" and insert therefor -- In accordance with the
present invention, --.

On page 2, line 2, please delete "according to the
invention".

On page 2, line 2-3, please delete "and is
characterized in that said" and insert therefor -- where
the --.

On page 2, line 3, please delete "that" and insert
therefor -- a --.

On page 2, line 4, please delete "means are
provided, destined to attach said" and insert therefor
-- attaches the --.

On page 2, lines 4-5, please delete "said means constituting a" and insert therefor -- where the connection is --.

On page 2, line 5, please delete "connection".

On page 2, line 7, please delete "According to an additional characteristic" and insert therefor -- In a further aspect of the present invention --.

On page 2, line 7, please delete "destined to be".

On page 2, line 8, after "zone", please insert -- or area --.

On page 2, line 8, please delete "To that end, the" and insert therefor -- The --.

On page 2, line 9, please delete "comprises" and insert therefor -- has --.

On page 2, line 9, please delete "destined to be".

On page 2, line 10, please delete "solid" and insert therefor -- integral --.

On page 2, line 12, please delete "In addition" and insert therefor -- Further --.

On page 2, line 13, please delete "said" and insert therefor -- the --.

On page 2, line 13, please delete "being" and insert therefor -- is --.

On page 2, line 15, please delete "solid" and insert therefor -- integral --.

On page 2, lines 18-20, please delete in their entirety and insert therefor:

-- Still further advantages of the present invention will become apparent to those of ordinary skill in the art upon reading and understanding the following detailed description of the preferred embodiments. --

On page 4, line 22, please delete "destined to be".
On page 4, line 26, please delete "The" and insert therefor -- As seen in FIGURE 3, the --.

On page 4, line 26, please delete "destined to equip" and insert therefor -- integral with --.

On page 4, line 27, please insert --,-- (comma) after "helmet (30)".

On page 5, line 2, please delete "cranial vault" and insert therefor -- skull --.

On page 5, line 2, please insert -- of the neck -- after "nape".

On page 5, line 3, please delete "presenting in front".

On page 5, line 3, please insert -- or area -- after "zone".

On page 5, line 3, please delete "proper".

On page 5, line 15, please insert -- or area -- after "zone".

On page 5, line 16, please delete "cranial vault" and insert therefor -- skull --.

On page 5, line 17, please insert -- or area -- after "zone".

On page 5, line 17, please insert -- of the neck -- after "nape".

On page 5, line 19, please insert -- or areas -- after "zones".

On page 5, line 24, please delete "bolsters of" and insert therefor -- bolsters for --.

On page 5, line 24, please insert -- of the neck -- after "nape".

On page 6, line 5, please delete "destined".

On page 6, line 5, please delete "on" and insert therefor -- by --.

On page 6, line 6, please delete "Said thus constituted" and insert therefor -- The --.

On page 6, line 9, please delete "Said" and insert therefor -- The --.

0010106010100

On page 6, line 20, please insert -- (see also FIGURE 6) -- after "slides (53)".

On page 6, line 23, please delete "According to the invention" and insert therefor -- As seen in FIGURE 4, --.

On page 7, line 6, after "Furthermore,", please insert -- as seen in FIGURE 5, --.

On page 7, line 13, please delete "It goes without saying that regardless of the type" and insert therefor -- It is also contemplated that there can be other types --.

On page 7, lines 13-14, please delete ", that does not constitute exceeding the scope of the invention,".

On page 7, lines 14-15, please delete "neither is the scope of the invention exceeded if".

On page 7, line 15, please delete "were" and insert therefor -- was not --.

On page 5, line 17, please insert -- or areas -- after "zones".

On page 7, line 17, please delete "It also goes without saying that" and insert therefor -- Finally, --.

On page 8, lines 1-3, please delete in their entirety and insert therefor:

-- The invention has been described with reference to the preferred embodiment. Obviously, modifications and alterations will occur to others upon reading and understanding the preceding detailed description. It is intended that the invention be construed as including all such modifications and alterations insofar as they come within the scope of the appended claims or the equivalents thereof. --

On page 9, line 1, please delete "Patent" and insert on the following line:

-- Having thus described the preferred embodiment, the invention is now claimed to be: --.

In the Claims:

Please amend claims 1-10 as follows:

1. (Amended) A protective [Protective] headgear [(30)] equipped with an [electro-acoustic] electroacoustic communication device [(1)] comprising an acoustic pick-up [a sensor (2) such as a microphone,] and a speaker [receiver (3)] arranged] in a case, further comprising:

[(4), while] connection means [(5, 53) are provided destined for attaching] to attach said case [(4)] to said headgear [(30)], [characterized in that] the connection means [(5, 53) constitute, additionally,] including a removable connection between the case of the communication device and the headgear.

2. (Amended) The protective [Protective] headgear [(30)] equipped with an [electro-acoustic] electroacoustic type communication device according to claim 1 [(1) characterized in that] wherein the case [(4) comprises] further includes:

an extension [(5) forming] that defines a connection tab which is engaged in a lateral guide [(53)] of complementary shape [of] in said protective headgear [(30)].

3. (Amended) The protective [Protective] headgear [(30)] equipped with an [electro-acoustic] electroacoustic type communication device [(1)] according to claim 2, [characterized in that it includes] further including:

an external principal shell [(31)] comprising two lateral wall portions [(37)] corresponding to zones occupied by [the] ears of a [the] user.

4. (Amended) The protective [Protective] headgear [(30)] equipped with an [electro-acoustic] electroacoustic type communication device [(1)] according to claim 3, [characterized in that] wherein the case [(4)] is disposed

5. (Amended) The protective [Protective] headgear
 [(30)] equipped with an [electro-acoustic] electroacoustic
 type communication device [(1)] according to claim 2,
 [characterized in that] wherein the lateral guide [(53)] is
 5 integral with a support piece [(48)] attached to the
 [principal] external shell [(31)] of said headgear [(30)].

a deformable lining [(41)] comprising a headband [(46),] retaining a deformable partition [or similar (47)], said headband [(46)] being fixed to the headgear by [at least one] the lateral guide [(53) holding] which holds the communication device.

7. (Amended) The protective [Protective] headgear
 [(30)] equipped with an [electro-acoustic] electroacoustic
 type communication device [(1)] according to [any of the
 preceding claims, characterized in that] claim 1, wherein the
 5 [communication] case [(4)] is [arranged] located [on the]
 inside of the headgear.

8. (Amended) The protective [Protective] headgear
 [(30)] equipped with an [electro-acoustic] electroacoustic
 type communication device [(1)] according to [any of the
 preceding claims, characterized in that] claim 1, wherein the
 case comprises:

a connection cable [(8)] retained at the headgear in its center portion by an attachment device [(15) destined to come into contact] which is configured to interconnection with [the] an attachment means [(450)] of [the] a chin-strap [(45)].

9. (Amended) The protective [Protective] headgear [(30)] equipped with an [electro-acoustic] electroacoustic type communication device [(1)] according to [any of the preceding claims, characterized in that] claim 1, wherein the case [(16)] comprises:

two slots [(19, 20)], a first cylindrical slot [(19) destined to receive] for receiving the acoustic pick-up [microphone sensor (2)] and a second cylindrical slot [(20)], of smaller diameter, [destined to accept] for receiving the speaker [receiver (3)].

10. (Amended) The protective [Protective] headgear [(30)] equipped with an [electro-acoustic] electroacoustic type communication device [(1)] according to claim 9, [characterized in that] wherein the acoustic pick-up [microphone sensor (2)] is [arranged] located above the speaker [receiver (3)].

Please add new claims 11-12 as follows:


11. A protective headgear comprising:
a shell having an interior and an exterior;
a deformable structure mounted to the shell interior
for supporting the shell on a user's head, the deformable
5 structure and the shell defining ear receiving areas;
at least one tab receiving guide mounted to the
shell adjacent one of the ear receiving areas;
a case having a tab which is selectively engagable
with the guide for removably mounting the case to the shell
10 adjacent the ear receiving areas;
a microphone/speaker assembly mounted in the case;
an RF transmitter/receiver assembly electrically
connected with the microphone/speaker assembly.
12. The protective headgear according to claim 11
further including:
a chin strap connected with the shell;
an electrical cable connected between the
5 transmitter/receiver assembly and microphone/speaker assembly;
a cable guide which is (i) releasably interconnected
to an intermediate portion of the electrical cable and
(ii) releasably attached to the chin strap.

REMARKS

This amendment is to place the application in better condition for examination and allowance. An early allowance of all claims is earnestly solicited.

Respectfully submitted,

FAY, SHARPE, BEALL, FAGAN,
MINNICH & MCKEE


Thomas E. Kocovsky, Jr.
Reg. No. 28,383
1100 Superior Avenue
Suite 700

CERTIFICATE OF MAILING

I hereby certify that this **PRELIMINARY AMENDMENT** in connection with U.S. Patent Application Serial No. 09/101,601 is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Assistant Commissioner For Patents, Washington, D.C., 20231, on this 11th day of September, 1998.

By: Hilary McNeely

23 JUL 1998 10 JUL 1998
IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:
A. GALET, et al.

Serial No.: Unknown

Filed: Herewith

For: IMPROVEMENT TO AN
ELECTROACOUSTIC
COMMUNICATION DEVICE
FOR USE ON PROTECTIVE
HEADGEAR

Attorney Docket No.:
GSQ 2 017

Examiner:

Art Unit:

09/101601

Cleveland, OH 44114
July 10, 1998

CONDITIONAL PRELIMINARY AMENDMENT

Assistant Commissioner
For Patents
Washington, D.C. 20231

Dear Sir:

In the Claims:

In claim 7, lines 2-3, please delete "l'une
quelconque des revendications précédentes" and insert
therefor --la revendication 1--.

"Express Mail" Mailing Label Number ELO30873713US

Date of Deposit July 10, 1998

I hereby certify that this paper or fee is being deposited with the United States Postal Service "Express Mail Post Office to Addressee" service under 37 CFR 1.10 on the date indicated above and is addressed to the Assistant Commissioner for Patents, Washington, D.C. 20231.

Hilary M. McNULTY

(TYPE OR PRINTED NAME OF SENDER)

Hilary M. McNulty

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

| | | |
|------------------------|---|-----------|
| In re application of: |) | Examiner: |
| A. GALET, et al. |) | |
| |) | Art Unit: |
| Serial No.: |) | |
| |) | |
| Filed: |) | |
| |) | |
| For: IMPROVEMENT TO AN |) | |
| ELECTROACOUSTIC |) | |
| COMMUNICATION DEVICE |) | |
| FOR USE ON PROTECTIVE |) | |
| HEADGEAR |) | |
| |) | |
| Attorney Docket No.: |) | |
| GSQ 2 017 |) | |

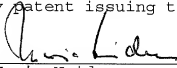
STATEMENT OF VERIFIED ENGLISH TRANSLATION

Assistant Commissioner
For Patents
Washington, D.C. 20231

Dear Sir:

The undersigned translator is fluent in French and English and that to the best of her knowledge and belief, the enclosed is a true and accurate translation of the French-language International (PCT) Patent Application No. PCT/FR97/00041.

The undersigned further declares that all statements made herein of her own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful and false statements may jeopardize the validity of the application or any patent issuing thereon.

By: 
Maria Neiden
(Typed Name of Translator)

Date: 8-20-1998

5161 Grafton Road
Brunswick Hills, OH 44212
(Address of Translator)

Translation

28 Rev'd PCT/PTO 14 SEP 1998

Improvement to an electro-acoustic Communication Device for Use on Protective Headgear.

The present invention concerns an electro-acoustic communication device and, more specifically, a device for protective headgear like a helmet equipped with such device.

Protective headgear has been used for quite some time in various fields, either in a professional capacity, as is the case with respect to the military, the police or the firemen, or for private or personal use, as is the case with respect to motorbikes, rally or racing vehicles. Also known are helmets which are equipped with a communication means, permitting its user to communicate with another user wearing a similar headgear. In this respect, helmets may be cited in French Patents No. 2 289 072, No. 2 502 372 or even No. 2 471 112, which are equipped with rather complicated and not very satisfactory electro-acoustic devices. In fact, the headgear as described in prior art cannot be worn under difficult wearing conditions, for example by the firemen who undertake delicate interventions. An improvement was already proposed which is described in the French Patent Application No. 2 565 057 filed by applicant, according to which the connection between headgear and the electro-acoustic device is removable, while the sensor is an osteo-microphone, carried on one arm. In that same application another electro-acoustic device is proposed, whose connection with the headgear is also removable, but according to which the sensor is a simple microphone, carried on one arm.

However, all these known devices hold a certain number of drawbacks and specifically of being obstructive, little used as well as being relatively complex and fragile.

It is the object of the present invention to resolve the aforementioned drawbacks by proposing a new, particularly simple, reliable and practical device.

Accordingly, the electro-acoustic type communication device for protective headgear according to the invention comprises a sensor, such as a microphone, and a receiver and is characterized in that said sensor and the receiver are arranged in a case and that connection means are provided, destined to attach said case to the headgear, said means constituting a removable connection.

According to an additional characteristic, the case is destined to be attached on the inside of the headgear in the zone occupied by the ear of the user. To that end, the case comprises an extension forming a connection tab, destined to be engaged in a lateral slide, solid with the headgear, having a complementary shape.

In addition, the headgear is, for example, of the type comprising a deformable lining, consisting of a retention headband, a deformable partition or similar, said headband being fixed at the headgear by at least the lateral slide holding the communication device, while the lateral slide is solid with a frontal support piece fixed at the principal external shell of the headgear.

Other characteristics and benefits of the invention become evident from the description given below regarding the attached drawings which are given by way of example only and are not limited thereto.

Figure 1 is a perspective view representing the entire unit of the communication device and an example of the protective headgear for which it is intended.

Figure 2 is an exploded view in perspective, illustrating the different elements constituting the communication device of the invention.

Figure 3 is a lateral view with partial extraction of the protective headgear, equipped with the communication device according to the invention.

Figure 4 is a perspective view of the headgear with its communication device.

Figure 5 is a detail view in perspective, depicting more specifically the retention of the connection cable.

The communication device (1) is of the electro-acoustic type, destined to emit and/or receive messages permitting the user to communicate with, for example, another user carrying a similar device and comprising a sensor (2) such as a similar microphone and at least one receiver (3).

According to the invention, the device comprises a case (4) in which is arranged, on the one hand, the receiver (3) and, on the other hand, the microphone (2). In addition, the case (4) comprises an extension forming a connection tab (5) permitting attachment of the device in a protective headgear.

It should also be added that the receiver (3) and the microphone (2) are joined to a connection (7) by a connection cable (8) which permits connecting the electro-acoustic device to the exterior elements of the equipment (9) known per se which comprise a sender/receiver post (10) and a control case (11) arranged between two connection cables (12a, 12b), a first electrical cable (12a) connected to the sender/receiver (10) thanks to a connection piece (13), and a second electrical cable (12b) connected to connection (7) of the device (1) thanks to an automatic safety cut-off (14).

In addition, on the connection cable (8) is fixed a hanging device (15) permitting the fixing of said cable (8) at the protective headgear (3) in an appropriate zone.

The case (4) comprises a case body (16) closed by a cover (17) fixed to said body (16) by clasp or thanks to a screw arrangement (18).

Said body of the case (16) is generally shaped like a triangle and comprises two slots (19, 20), a first cylindrical slot (19) destined to receive the microphone sensor (2) and a second cylindrical slot (20) of smaller diameter, destined to receive the receiver (3).

In addition, and beneficially, these two slots are connected between each other in order to form a common recessed slot (21), realized in the body of the case and which is open toward the outside by a lateral opening (22) destined for passage and holding of the connection cable (8). The upper wall of the body of the case (16) comprises the previously mentioned extension (5). The latter makes contact with the body of the case and extends, in flat shape upwards to where the width and the length permit its engagement in a corresponding slide arranged on the inside of the protective headgear.

The cover (17) is constituted by a plate having the general identical shape of the body of the case (16) and comprising two holes (23, 24) a first hole (23) arranged at the level of the microphone (2) and a second hole (24) arranged at the level of the receiver (3).

In addition, there are beneficially provided two discs (200, 300) of deformable foam, destined to be arranged at the bottom of the slot (19, 20), between the microphone (2) and the bottom wall (160) of the body of the case (16) as well as between the receiver (3) and said bottom wall.

The communication device according to the invention is destined to equip a protective helmet (30) which can be of any type. A headgear is thus described by way of example

only, but not limited thereto, of the type which is used, for example, by firemen and comprising a principal external shell (31) protecting the cranial vault and the nape of the user and presenting in front a facial opening (32) in the zone occupied by the face proper of the user.

The shell is of rigid material and can be of any appropriate material such as plastic, steel, aluminum or composite material of the type comprising a stacking of layers of reinforcement fibers, impregnated and inter-connected by a matrix of resin. Said external shell is constituted by a slightly spherical wall (33) comprising several wall portions, namely an upper front portion (34), prolonged towards the rear by an upper rear wall portion (35), with the latter being itself prolonged toward the bottom by a lower rear wall portion (36) and comprising, in addition, two lateral wall portions (37). The front upper portion (34) corresponds to the zone occupied by the face of the user and is limited by the upper edge (38) of the facial opening (32) which, relative thereto, is laterally limited by two lateral edges (39). The upper rear wall portion (35) corresponds to the zone occupied by the cranial vault of the user, while the lower rear portion of the wall (36) corresponds to the zone occupied by the nape of the user.

It should be added that the wall (33) of the body is limited toward the bottom by a lower edge (40). The lateral wall portions (37) correspond to the zones occupied by the ears of the user and are limited towards the front by the lateral edge (39) corresponding to the facial opening (32) and toward the bottom by the front ends of the lower edge (40). The exterior shell (31) constitutes a cavity comprising, for example, a lining (41) and other elements, such as, for example, the bolsters of the nape (42) as well as a circular patch (43). The latter is constituted, for example, by a layer of foam, which is, for example, glued on the inner surface (44) of the shell. The deformable cap (41) permits, on the one hand, adaptation of the headgear to the volume and shape of the head of the user, and, on

the other hand, the maintenance of a space between the head and the inner surface of the shell, and comprises, in addition and in a manner known per se, a chin strap (45).

The deformable lining (41) is composed of a padded headband around the head (46) and a deformable partition (47) as, for example, a textile netting, destined to be supported on the user's head. Said thus constituted lining is fixed on the inside of the headgear by its headband on a front support piece (48) arranged and fixed on the inside of the shell so that it extends from the front and partially toward the back while following the profile of the interior surface of the wall of the shell. Said frontal support piece (48) is constituted by a curved wall of plastic material whose front portion extends partially in upward direction and whose ends of the lateral portions (49) are fixed to the lateral portions of the walls (37) of the shell, for example by screws (50) or similar. The fixation of the headband (46) on the front piece is effected thanks to buttons (51) which project from the band in order to be engaged and retained within corresponding obscure slides (52, 53) realized in the frontal piece (48). The two frontal slides (52) are of sufficient length in order to receive and correctly retain the hook-up buttons of the corresponding headband, while at least one of the lateral slides (53) is prolonged toward the bottom in order to receive the button of the corresponding band and to guarantee the hold and connection of the communication device (1) according to the invention. It should be noted that the lateral slides (53) are arranged on the inside of the headgear and laterally in the lateral zones occupied by the ears of the user of the headgear.

According to the invention, the communication case (4) is arranged on the inside of the headgear against the lateral wall portions (37) of the shell in the zone occupied by the ear of the wearer of the headgear. To that end, said case (4) is retained in the headgear by cooperation of its connection tab (5) with the lateral slide (53) as is, for example illustrated with respect to the right lateral slide. Also, the extension of the case (5) is

engaged in the slide.

When in "on" position inside the headgear, the microphone sensor (2) is positioned above the receiver (3).

Furthermore, the connection cable (8) is connected with the headgear in its center portion (80) thanks to the hook-up device (15) destined to engage with the hook-up means (450) of the chin-strap (45). The hook-up device (15) comprises a first piece (15a) on which a second piece (15b) is articulated, which comprises an engagement groove (150) in which the connection cable (8, 80) is engaged. Thus, the latter extends along the lower edge (40) before jutting out towards the front (AV).

It goes without saying that regardless of the type of protective headgear employed, that does not constitute exceeding the scope of the invention, . Furthermore, neither is the scope of the invention exceeded if the case (4) were fixed at the headgear, but on the outside, as for example on its exterior wall (33) at the level of the lateral wall portions, at the level of the zones occupied by the ears. It also goes without saying that one can utilize all other means of connection, other than described in the preceding, such as, for example, by gluing, screw attachment etc.

It should be noted that the connection means of the case are means constituting a removable connection permitting easy installation and removal by hand, which the user can execute without the necessity of a special tool.

Of course, the invention is not limited to the embodiments described and represented here by way of examples, but it includes as well all equivalent techniques and combinations thereof.

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PATENT CLAIMS

1. Protective headgear (30) equipped with an electro-acoustic communication device (1) comprising a sensor (2) such as a microphone, and a receiver (3) arranged in a case (4), while connection means (5, 53) are provided destined for attaching said case (4) to said headgear (30), characterized in that the connection means (5, 53) constitute, additionally, a removable connection between the case of the communication device and the headgear.

2. Protective headgear (30) equipped with an electro-acoustic type communication device (1) characterized in that the case (4) comprises an extension (5) forming a connection tab which is engaged in a lateral guide (53) of complementary shape of headgear (30).

3. Protective headgear (30) equipped with an electro-acoustic type communication device (1) according to Claim 2, characterized in that it includes an external principal shell (31) comprising two lateral wall portions (37) corresponding to zones occupied by the ears of the user.

4. Protective headgear (30) equipped with an electro-acoustic type communication device (1) according to Claim 3, characterized in that the case (4) is arranged on the inside of headgear (30) in the zone occupied by the ear of the user.

5. Protective headgear (30) equipped with an electro-acoustic type communication device (1) according to Claim 4, characterized in that the lateral guide (53) is integral with a support piece (48) attached to the principal external shell (31) of headgear (30).

6. Protective headgear (30) equipped with an electro-acoustic type communication device (1) according to Claim 5, characterized in that the headgear is of the type comprising a deformable lining (41) comprising a headband (46), retaining a deformable partition or similar (47), said headband (46) being fixed to the headgear by at least one lateral slide (53) holding the communication device.

7. Protective headgear (30) equipped with an electro-acoustic type communication device (1) according to any of the preceding Claims, characterized in that the communication case (4) is arranged on the inside of the headgear.

8. Protective headgear (30) equipped with an electro-acoustic type communication device (1) according to any of the preceding Claims, characterized in that the case comprises a connection cable (8) retained at the headgear in its center portion by an attachment device (15) destined to come into contact with the attachment means (450) of the chin-strap (45).

9. Protective headgear (30) equipped with an electro-acoustic type communication device (1) according to any one of the preceding Claims, characterized in that the case (16) comprises two slots (19, 20), a first cylindrical slot (19) destined to receive the microphone sensor (2) and a second cylindrical slot (20), of smaller diameter, destined to accept the receiver (3).

10. Protective headgear (30) equipped with an electro-acoustic type communication device (1) according to Claim 9, characterized in that the microphone sensor (2) is arranged above the receiver (3).

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

| | | |
|------------------------|---|-----------|
| In re application of: |) | Examiner: |
| A. GALET, et al. |) | |
| |) | Art Unit: |
| Serial No.: 09/101,601 |) | |
| |) | |
| Filed: January 7, 1997 |) | |
| |) | |
| For: IMPROVEMENT TO AN |) | |
| ELECTROACOUSTIC |) | |
| COMMUNICATION DEVICE |) | |
| FOR USE ON PROTECTIVE |) | |
| HEADGEAR |) | |
| |) | |
| Attorney Docket No.: |) | |
| GSQ 2 017 |) | |

37 C.F.R. 1.27 STATEMENT OF STATUS AS
A SMALL BUSINESS ENTITY

Assistant Commissioner
For Patents
Washington, D.C. 20231

Dear Sir:

The undersigned affirms:

That he is an officer of the assignee **GALLET SA**, and is empowered to act on behalf of the assignee; the assignment is being filed concurrently herewith for recording;

That the assignee **GALLET SA**, together with all of its affiliates combined had fewer than five hundred (500) employees including full-time, part-time, and temporary employees on the average during each pay period of the previous fiscal year of the assignee and its affiliates; and,

That the assignee has not assigned, granted, conveyed, or licensed, and is under no obligation under contract or law to assign, grant, convey, or license any rights in the invention to any person who could not be classified as an independent inventor under 37 C.F.R. 1.9(c) if that person had made the invention, or to any concern which would not qualify as a small business under 37 C.F.R. 1.9(d) or a nonprofit organization under 37 C.F.R. 1.9(e).

The undersigned acknowledges a duty to file, in this application or patents issuing thereon, notification of any change in status resulting in loss of entitlement to small entity status prior to paying, or at the time or paying, the earliest of the issue fee or any maintenance fee due after the date on which status as a small entity is no longer appropriate.

The undersigned further declares that all statements made herein of his own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful and false statements may jeopardize the validity of the application or any patent issuing thereon.

GALLET SA

By: GALET Adrien Date: July 24, 1998
Title: President 

2025 RELEASE UNDER E.O. 14176

DECLARATION FOR PATENT APPLICATION

As the below-named inventors, we hereby declare that:

Our residences, post office addresses, and citizenships are as stated below next to our names.

We believe we are the original, joint, and first inventors of the subject matter which is claimed and for which a patent is sought on the invention entitled:

**IMPROVEMENT TO AN ELECTROACOUSTIC COMMUNICATION DEVICE
FOR USE ON PROTECTIVE HEADGEAR**

the specification of which was filed on January 7, 1997
and accorded U.S. Application Serial No. 09/101,601.

We hereby state that we have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment referred to above.

We acknowledge the duty to disclose information which is material to the patentability of this application in accordance with Title 37 Code of Federal Regulations § 1.56(a).

We hereby claim foreign priority benefits under Title 35, United States Code § 119(a)-(d) of any foreign application(s) for patent or inventor's certificate listed below and have also identified below any foreign application for patent or inventor's certificate having a filing date before that of the application on which priority is claimed:

International (PCT) Application No. PCT/FR97/00041,
Filed 9 January 1997
French Patent Application No. 96 00459,
Filed 12 January 1996

We hereby claim benefit under Title 35, United States Code § 119(e) of any United States provisional applications listed below:

None

We hereby claim the benefit under Title 35, United States Code, § 120 of any United States application(s) listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States application in the manner provided by the first paragraph of Title 35, United States Code § 112, we acknowledge the duty to disclose material information as defined in Title 37, Code of Federal Regulations, § 1.56(a) which occurred between the filing date of the prior application and the national or PCT international filing date of this application:

None

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

| | | |
|------------------------|---|---------------------|
| In re application of: |) | Examiner: |
| A. GALET, et al. |) | |
| |) | Art Unit: |
| Serial No.: 09/101,601 |) | |
| |) | |
| Filed: January 7, 1997 |) | |
| |) | |
| For: IMPROVEMENT TO AN |) | |
| ELECTROACOUSTIC |) | |
| COMMUNICATION DEVICE |) | |
| FOR USE ON PROTECTIVE |) | |
| HEADGEAR |) | |
| |) | |
| Attorney Docket No.: |) | Cleveland, OH 44114 |
| GSQ 2 017 |) | September 11, 1998 |

RESPONSE TO NOTIFICATION OF MISSING REQUIREMENTS
UNDER 35 U.S.C. 371 IN THE UNITED STATES
DESIGNATED/ELECTED OFFICE (DO/EO/US)

Assistant Commissioner
 For Patents
 BOX PCT
 Washington, D.C. 20231

Dear Sir:

In connection with the above-entitled case, please find enclosed: (1) the Patent Office return copy of the Notification of Missing Requirements Under 35 U.S.C. 371 in the United States Designated/Elected Office (DO/EO/US) issued August 12, 1998; (2) the Declaration For Patent Application for U.S. Application Serial No. 09/101,601, filed in the U.S. Patent Office on July 10, 1998 and executed July 24, 1998; (3) the 37 C.F.R. 1.16(e) Surcharge of \$ 65.00 (Small Entity Rate - A 37 CFR 1.27 Statement of Status as a Small Business Entity is also enclosed); and (4) the 37 CFR 1.492(f) Non-English specification filing fee of \$ 130.00.

09/16/1998 PVOLPE 00000094 09101601

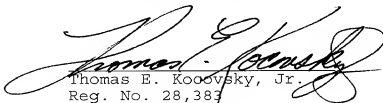
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| 01 FC:156 | 130.00 DP |
| 02 FC:254 | 65.00 DP |

09101601-10510160

The Commissioner is hereby authorized to charge any additional fees which may be required, or to credit any overpayment to Deposit Account No. 06-0308.

Respectfully submitted,

FAY, SHARPE, BEALL, FAGAN,
MINNICH & MCKEE



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CERTIFICATE OF MAILING

I hereby certify this RESPONSE TO NOTIFICATION OF MISSING REQUIREMENTS UNDER 35 U.S.C. 371 IN THE UNITED STATES DESIGNATED/ELECTED OFFICE (DO/EO/US); DECLARATION FOR PATENT APPLICATION; 37 CFR 1.16(e) FEE; and 37 CFR 1.27 STATEMENT OF STATUS AS A SMALL BUSINESS ENTITY in connection with U.S. Patent Application Serial No. 09/101,601 are being deposited with the United States Postal Service as first class mail in an envelope addressed to: Assistant Commissioner For Patents, BOX PCT, Washington, D.C., 20231, on this 11th day of September, 1998.

By: Nancy M. McNulty

We hereby appoint the following attorney(s) and/or agent(s) to prosecute this application and to transact all business in the Patent and Trademark Office connected therewith:

Thomas E. Kocovsky, Jr., Reg. No. 28,383

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at telephone number: (216) 861-5582

Address all correspondence to:

FAY, SHARPE, BEALL,
FAGAN, MINNICH & MCKEE
1100 Superior Avenue, 7th Floor
Cleveland, Ohio 44114

We hereby declare that all statements made herein of our own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

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United States Patent & Trademark Office
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